

We claim:

1. A backflow prevention apparatus, comprising:
  - (a) a valve housing having an access port for removal and reinstallation of an internal mechanism without the removal of the valve housing from a piping system;
  - (b) an arcuate cover for closing the access port;
  - (c) an endless resilient gasket for providing a seal between the cover and the valve housing, comprising a gasket web and a pair of legs, wherein the gasket web connects the legs to form a generally U-shaped cross-section, the gasket being positioned on a peripheral edge of the access port, with the gasket web positioned adjacent to the peripheral edge and the legs positioned on opposite sides of the peripheral edge in sealing contact with the cover and the valve housing; and
  - (d) a fastener for clamping the cover to the valve housing, wherein the cover is shaped to provide a substantially uniform clamping force to the gasket.
  
2. The backflow prevention apparatus according to claim 1, wherein the cover has at least one cover flange for clamping to a mating valve housing flange disposed on the valve housing.

3. The backflow prevention apparatus according to claim 1, wherein the cover and valve housing are connected by at least one hinge for permitting the cover to move away from and into contact with the resilient gasket.

4. The backflow prevention apparatus according to claim 2, wherein the fastener comprises at least one bolt extending through a hole in the cover flange and a corresponding hole in the valve housing flange.

5. The backflow prevention apparatus according to claim 1, wherein the gasket web has a thickness greater than a thickness of the legs to prevent the gasket from extruding outward between the valve housing and the cover when the cover is attached to the valve housing.

6. The backflow prevention apparatus according to claim 1, wherein the gasket has an elastomer hardness of about 70 durometer to about 90 durometer on a Shore A scale.

7. The backflow prevention apparatus according to claim 1, wherein the gasket has an elastomer hardness of about 80 durometer on a Shore A scale.

8. A backflow prevention apparatus, comprising:
- (a) a cylindrical valve housing having an access port in a peripheral surface thereof for removal and reinstallation of an internal mechanism without the removal of the valve housing from a piping system;
  - (b) an arcuate cover having a pair of spaced apart cover flanges for closing the access port, wherein the cover flanges are spaced apart by a first width;
  - (c) an endless resilient gasket for providing a seal between the cover and the valve housing, comprising a web and a pair of legs, wherein the web connects the legs to form a generally U-shaped cross-section, the gasket being positioned on a peripheral edge of the access port, such that the web is positioned adjacent to the peripheral edge and the legs are positioned on opposite sides of the peripheral edge in sealing contact with the cover and the valve housing;
  - (d) a pair of spaced apart valve housing flanges carried by the cylindrical valve housing being spaced apart by a second width, wherein the first width is greater than the second width; and
  - (e) a fastener for clamping the cover flanges to the corresponding valve housing flanges.
9. The backflow prevention apparatus according to claim 8, wherein the cover has a height measured from the cover flange to a top centerline of the cover, the first width being greater than the height.

10. The backflow prevention apparatus according to claim 8, wherein the fastener comprises at least one bolt extending through a hole in the cover flange and a corresponding hole in the valve housing flange.

11. The backflow prevention apparatus according to claim 8, wherein the web has a thickness greater than a thickness of the legs to prevent the gasket from extruding outward between the valve housing and the cover when the cover is attached to the valve housing.

12. The backflow prevention apparatus according to claim 8, wherein the gasket has an elastomer hardness of about 70 durometer to about 90 durometer on a Shore A scale.

13. The backflow prevention apparatus according to claim 8, wherein the gasket has an elastomer hardness of about 80 durometer on a Shore A scale.

14. The method of installing a cover seal system, comprising the steps of:

- (a) providing a valve housing having an access port for removal and reinstallation of an internal mechanism without the removal of the valve housing from a piping system;

- (b) providing an arcuate cover for closing the access port;
- (c) providing an endless resilient gasket for providing a seal between the cover and the valve housing, comprising a web and a pair of legs, wherein the web connects the legs to form a generally U-shaped cross-section, the gasket being positioned on a peripheral edge of the access port, such that the web is positioned adjacent to the peripheral edge and the legs are positioned on opposite sides of the peripheral edge in sealing contact with the cover and the valve housing; and
- (d) clamping the cover to the valve housing using a fastener, wherein the cover is shaped to provide a substantially uniform clamping force to the gasket.

15. The method according to claim 14, wherein clamping the cover to the valve housing comprises the steps of:

- (a) positioning the cover over the access port and resilient gasket;
- (b) mating a cover flange to a mating valve housing flange; and
- (c) fastening the cover flange to the mating valve housing flange using the fastener.

16. An endless resilient gasket for a backflow prevention apparatus having a valve housing with an access port in a peripheral surface thereof for removal and reinstallation

of an internal mechanism and an arcuate cover for closing the access port, the resilient gasket comprising:

- (a) a web having a first thickness; and
- (b) a pair of outwardly projecting legs each having a second thickness, wherein the legs are connected by the web to form a generally U-shaped cross-section, the U-shaped cross-section permitting the gasket to straddle a peripheral edge of the access port in sealing contact with the cover and the valve housing.

17. The endless resilient gasket according to claim 16, wherein the first thickness is greater than the second thickness to prevent the gasket from extruding outward between a valve housing and a cover when the cover is attached to the valve housing.